As the embryo develops, allometric growth and differentiation of the cephalothorax occur, and the egg surface begins to wrinkle (Fig. 8). Wrinkles extend away from the developing cephalothorax. The chorion cracks several days prior to hatching, leaving the mouthparts directly exposed to the environment (Fig. 9). Savory (1928) erroneously referred to this as hatching. At the same time some of the spheres break loose and can be seen adhering to mouthparts (Fig. 9). They can sometimes be seen even on the spiderling after hatching and the first molt (Fig. 10). Slight deformations appear in the laminar chorion surface where the spheres have been detached (Fig. 6).

When we opened the egg cases to remove eggs for study, the latter were left in a vial for continued incubation. Often these eggs became dessicated and the embryos did not develop beyond the cracked-chorion stage shown in Figure 8. When a drop of water was added to the vial every other day for one week, viable spiderlings hatched; thus, this operation became routine. The addition of water sometimes allowed fungus to grow, and, as a result, some eggs were destroyed. During an attempt to embed eggs for further analysis of the chorionic spheres, we discovered that the entire chorion is strongly hydrophobic.

All eggs which incubate in non-aquatic environments must be able to deal with the potential hazard of dessication. The partial coating of hydrophobic spheres on the chorions of the two spider species studied could serve to limit the surface area through which water molecules may pass to the environment. It seems reasonable that the spheres may additionally provide survival value to the egg by providing moisture repellency, thereby secondarily inhibiting fungal growth.

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SCIENTIFIC NOTE

Record *Triatoma* captures from *Neotoma* dens in Southwestern United States. — Wood rat *(Neotoma)* houses or dens occasionally support large numbers of conenose bugs *(Triatoma, Paratriatoma)*. The average number of triatomes captures from 1022 wood rat houses searched in the southwestern United States from 1936 through 1973 was 3.5 per house. Capture of triatomes from 18 wood rat harborages recorded in Table 1 were all in locations isolated from human dwellings except for Griffith Park, the piles of scrap lumber at the San Joaquin Experimental Range and 8 km southwest of Fallbrook in California. The wood rat from Murray Canyon, Eaton Canyon, Fallbrook, Griffith Park and the SJER was *Neotoma fascipes*. The dens were large piles of sticks and twigs as illustrated by Linsdale & Tevis (1951, The Dusky-footed Wood Rat, U.C. Press, Fig. 56). The New Mexico triatomes were from stick houses of *N. micropus* (Wood & Wood, 1961, Am. J.

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Trop. Med. & Hyg. 10:155-65, Fig. 2). The Arizona triatomes were from a stick and rock house built probably by *N. albigula* on a pile of rocks erected by the road department for diversion of water. The wood rat had piled sticks and twigs over the structure and as stones were removed, bugs were easily picked from them, especially around the grass nest buried among the larger rocks near the ground. The Lovejoy Buttes location involved stick houses piled in and over dead or live, recumbent Joshua tree trunks where *N. lepida* occurs.

Table 1. Populations of *Triatoma* and *Paratriatoma* in Dens of the Wood Rat, *Neotoma*.

Species and Subspecies	Number of Triatomes								Location of Capture	Date Collected
	Adults		Nymphal instars					Total		
	♂♂	♀♀	5	4	3	2	1			
T. p. protracta	2	3	13	14	20	8	14	74	Murray Canyon, San Diego, Co., CA	VII-26-37
T. p. protracta	4	8	5	6	14	18	17	72	Eaton Canyon, Los Angeles Co., CA	VIII-28-37
T. p. woodi	2	4	21	7	8	16	16	74	20 km E Marathon, Brewster Co., TX	VII-27-39
T. p. protracta	1	2	7	10	6	10	0	36	Murray Canyon, San Diego Co., CA	XI-18-39
T. p. protracta	0	0	0	0	0	19	10	29	8 km SW Fallbrook, San Diego Co., CA	XI-9-43
T. p. protracta	3	4	9	3	2	5	3	29	ibid	XI-16-43
P. hirsuta and	0	0	27	0	0	0	0	46	Nr. Brenda,	XI-28-45
T. rubida uhleri	0	0	19	0	0	0	0		Yuma Co., AZ	
T. p. protracta	0	2	3	2	4	14	4	29	Griffith Park, L.A. L.A. Co., CA	X-7-50
T. p. protracta	1	4	3	14	4	4	0	30	Big Wood Pile, SJER* Madera Co., CA	IV-9-52
T. p. protracta	0	3	3	6	10	4	0	26	Small Wood Pile, SJER, Madera Co., CA	IV-9-52
T. p. protracta	8	6	13	10	17	2	2	58	Griffith Park, L.A. L.A. Co., CA	XII-29-52
T. p. protracta	13	15	3	7	1	3	0	42	Nr. Silver City, Grant Co., NM	IX-9-57
T. p. protracta	13	19	2	2	2	2	0	40	Nr. Tyrone, Grant Co., NM	IX-10-57
T. p. protracta	4	7	10	8	15	5	0	49	Griffith Park, L.A., L.A. Co., CA	XI-28-63
P. hirsuta	0	0	5	13	13	6	0	37	Nr. Lovejoy Buttes, L.A. Co., CA	X-24-64
P. hirsuta	0	2	14	42	10	3	1	72	Ibid	XI-8-64
P. hirsuta	0	0	7	11	11	1	0	30	ibid	XII-5-64

*SJER = San Joaquin Experimental Range, O'Neals, CA.

Laboratory life cycle data indicates more first, second and third instar nymphs and adults during summer and early fall and principally fourth and fifth instar nymphs during late fall and winter. Summer collections in Murray Canyon, Eaton Canyon and east of Marathon (Table 1) support the above statement as do winter collections at Brenda and Lovejoy Buttes. Local climatic factors and presence of the wood rat may be as important as temperature in determining the nymphal and adult composition of triatome populations in wood rat houses. — SHERWIN F. WOOD, *614 West Shenandoah St., Thousand Oaks, CA 91360.*